IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Bartenbach et al.	Docket No.:	54395
Application No.:	10/806,232	Examiner:	BOYER, RANDY
Filed:	March 23, 2004	Art Unit:	1764
Customer No.:	26474	Confirmation No.:	9664

For: Process for the scale-up of a reactor for carrying out a high-temperature reaction, reactor and use

Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Applicants request review of the final rejection of December 28, 2007, in the above-identified application. No amendments are being filed with this request. This request is being filed with a notice of appeal. The review is requested for the reasons stated on the attached sheets.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account 14.1437. Please credit any excess fees to such account.

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Status of Claims: Claims 1 – 18 and 20 – 24 are pending, stand rejected, and are being appealed. No claims have been withdrawn from consideration. Claim 19 is canceled.

Arguments

I. The rejection of claims 1 – 13 and 18 – 22 under 35 U.S.C. §102(b) over *Gravley et al.* (US 4,765,964) is in clear error.

The Office action alleges that no special definition has been provided for the term, "channel," or for the term, "gap." This assertion is in clear error. The specification draws a clear, emphatic, and important distinction between a mere cylindrical geometry and a gap-like geometry, stating:

> Preferably, the transition from the reaction chamber to the quench area is restricted to a gap having a width in the range from 50 to 150 mm. Using the solution according to the invention presented here, the disadvantages of the enlargement of the cylindrical cross section with respect to the realizable quench action are avoided by changing from the cylindrical geometry to a gap-like geometry. The gap is designed here such that heat dissipation is possible very effectively and homogeneously by direct spraying in of water from one or from both sides of the gap with small jet reaches and very fine sprays. Preferably, this gap is designed as an annular gap, thus preceding and afterconnected plant parts, which as a rule have a cylindrical cross section, can be integrated more easily.[1]

To make the definition of "gap" even clearer, an annular gap is illustrated in Figures 2 and 4.

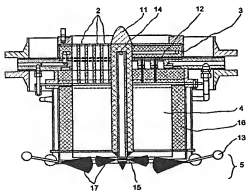

Figure 2.

Portion of Figure 4.

[1] Specification, page 3, lines 4 – 16.

Even cursory review of these figures makes the definition of an "annular gap" clear. Figure 4 shows a quench medium sprayed clockwise in a tangential direction into the quench area designed as an annular gap using annularly arranged quench nozzles.

The specification makes clear that "[t]he gap-like, preferably annular gap-like geometry of the transition from the reaction chamber to the quench chamber makes possible jetting in of the quench medium, for example water or oil, either from one side of the gap or from both sides of the gap."[2] Clearly, in a merely cylindrical geometry, such jetting in of the quench medium is impossible, because only one "side" exists.

The terms "gap," and "annular gap," as defined, illustrated, and explicitly contrasted to a cylindrical geometry, require more than a mere cylindrical geometry.

Yet, the Advisory action on page 2 states, "'generally annularly shaped end ***wall*** 46 which extends from the downstream end of the throat 34 to the upstream end of pyrolysis zone sidewall 48 [and upstream of quench means 56]'"[3] clearly meets the presently claimed annular ***gap***. To the contrary, equating an annularly shaped end wall with an annular gap constitutes clear error.

The *Gravley et al.* reference does not describe a transition in the form of an annular gap from a reaction chamber to a quench area. Instead of an *annular gap*, the reference describes a mere *throat*, having a cylindrical geometry.

The reactor scaled-up by the process of claim 1 must also provide a supply of a reaction mixture via channels of a burner block to a reaction chamber, not merely through a single channel. According to the *Gravley et al.* reference, "a tubular member **23** extends through the chamber **18** and empties into the passage **16**."[4] "Oxidant fluid and combustible fluid are introduced into a chamber **10** via the passage **16**."[5] Thus, the *Gravley et al.* reactor does not provide a supply of a reaction mixture via channels of a burner block to a reaction chamber. To the contrary, the *Gravley et al.* reference describes supplying a reaction mixture to a reaction chamber via a passage **16**.

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[2] Specification, page 3, lines 29 – 32 (emphasis added).
[3] Page 2, Section #1 of the Advisroy action mailed April 02, 2008, (quoting Gravley, column 5, lines 63 – 66; and drawing), (emphasis added).
[4] Column 3, lines 22 – 24 of US 4,765,964.
[5] Column 3, lines 15 – 16 of US 4,765,964.

II. The rejection of claim 23 under 35 U.S.C §103(a) over *Gravley et al.* (US 4,765,964) or over *Gravley et al.* in view of *Kuehner* (US 5,188,806) is in clear error.

The *Kuehner* reference does not provide an apparent reason to modify the *Gravley et al.* reference so that the reactor provides a supply of a reaction mixture via channels of a burner block to a reaction chamber. The *Kuehner* reference does not provide an apparent reason to modify the *Gravley et al.* reference so that the transition from the reaction chamber to the quench area is designed in the form of a gap, let alone an annular gap. Thus, the present invention is non-obvious over *Gravley et al.* in view of *Kuehner.*

III. The rejection of claims 14 – 18 and 24 under 35 U.S.C §103(a) over *Gravley et al.* in view of *Bakker* (US 3,640,739) is in clear error.

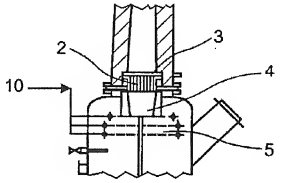
The *Bakker* reference does not provide an apparent reason to modify the *Gravley et al.* reference so that the reactor provides a supply of a reaction mixture via channels of a burner block to a reaction chamber. The *Bakker* reference does not provide an apparent reason to modify the *Gravley et al.* reference so that the transition from the reaction chamber to the quench area is designed in the form of a gap, let alone an annular gap. Thus, the present invention is non-obvious over *Gravley et al.* in view of *Bakker.*

IV. The rejection of claims 3, 13 – 19 and 24 on the grounds of nonstatutory obviousness-type double patenting over claims 1 – 7 of US 6,869,279 is in clear error.

The Office action asserts that an annular gap is "necessarily present in the reactor of the '279 patent, since there must be some separation of space (i.e. a 'gap') between the reaction zone and quench zone."[6] To the contrary, an annular gap is not described in US 6,869,279. Figure 2 of US 6,869,279, partially reproduced below, illustrates the

[6] Page 9, lines 19 – 20 of the Office action mailed December 28, 2007, and Page 10, lines 15 – 16 of the Office action mailed January 09, 2007.

transition between the reaction chamber **4** and the quench area **5** according to the reference. This transition is not in the form of an annular gap. Instead, reaction chamber **4** empties into quench area **5** through a mere cylindrical cross-section.



Thus, the US 6,869,279 reference describes precisely the sort of cylindrical geometry that is distinguished from a gap-like geometry in the specification on page 3, lines 7 – 16. Moreover, scale-up of the reactor described in the US 6,869,279 reference would be subject to the problems described in the specification on page 2, lines 12 – 24.

The US 6,869,279 reference provides no apparent reason to make the modifications necessary to arrive at the present invention. Thus, claims 3, 13 – 19, and 24 are non-obvious over claims 1 – 7 of the reference. Please note: claim 19 is cancelled.

In Conclusion:

The rejections are based on clear errors, and should be withdrawn. The present application is in condition for allowance. Favorable action is respectfully requested. In order to facilitate the resolution of any issues or questions presented by this paper, please feel free to contact the undersigned by phone to further the discussion.

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